

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-24. (Cancelled):

25. (Currently Amended): A method for treating ~~or preventing~~ a Flaviviridae viral infection in a host comprising administering to the host a therapeutically effective amount of at least one compound according to claim 50.

26. (Previously Presented): A method according to claim 25, wherein said pharmaceutically acceptable salt is sodium salt.

27. (Cancelled):

28. (Cancelled):

29. (Cancelled):

30. (Cancelled):

31. (Cancelled):

32. (Cancelled):

33. (Original) A method according to claim 25, wherein X is 4-methyl-cyclohexyl or 2-hydroxy-4-methyl-cyclohexyl.

34. (Cancelled):

35. (Previously Presented): A method according to Claim 25, wherein said

Flaviviridea viral infection is HCV.

36. (Cancelled):

37. (Cancelled):

38. (Previously Presented): A method according to Claim 64, wherein said compound is a sodium salt.

39. ((Previously Presented): A method according to Claim 64, wherein said Flaviviridea viral infection is HCV.

40. (Previously Presented): A method according to Claim 25, further comprising administering at least one additional agent chosen from viral serine protease inhibitor, viral polymerase inhibitor, viral helicase inhibitor, immunomodulating agent, antioxidant agent, antibacterial agent, therapeutic vaccine, hepatoprotectant agent or antisense agent.

41. (Previously Presented): A method according to Claim 25, further comprising administering at least one additional agent chosen from interferon α , ribavirin, silybum marianum, interleukine-12, amantadine, ribozyme, thymosin, N-acetyl cysteine or cyclosporin.

42. (Previously Presented): A method for inhibiting or reducing the activity of a flaviviridae viral polymerase in a host comprising administering to said host a therapeutically effective amount of at least one compound according to claim 50.

43. (Cancelled):

44. (Cancelled):

45. (Previously Presented): A method as defined in Claim 42, wherein said polymerase is a RNA-dependant RNA-polymerase.

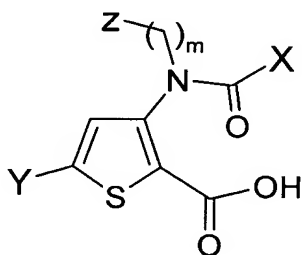
46. (Previously Presented): A method as defined in Claim 42, wherein said polymerase is HCV polymerase.

47. (Previously Presented): A pharmaceutical composition comprising at least one compound according to claim 50 and at least one pharmaceutically acceptable carrier or excipient.

48. (Cancelled):

49. (Cancelled):

50. (Previously Presented): A compound of the formula:



or a pharmaceutically acceptable salt thereof;

wherein;

Z is cyclohexyl substituted by one or more substituents independently chosen from oxo, halogen, SO₂R_f, CONR_gR_h, C₁₋₆ alkyl, C₆₋₁₂ aralkyl, C₆₋₁₂ aryl, C₁₋₆ alkyloxy, C(O)C₁₋₆ alkyl, C₃₋₁₀ heterocycle, hydroxyl, NR_gR_h, C(O)OR_f or cyano;

R_f, R_g and R_h in each case are independently H or C₁₋₆ alkyl;

Y is unsubstituted phenyl or phenyl substituted by one or more substituents independently chosen from halogen, nitro, SO₂R_f, C₁₋₆ alkyl, C₁₋₆ alkyloxy, C(O)C₁₋₆ alkyl, C(O)OR_f, cyano and azido;

X is cyclohexyl unsubstituted or substituted by one or more substituents

independently chosen from C₁₋₆ alkyl, halogen, C₂₋₆ alkenyl, C₂₋₆ alkynyl or C₁₋₆ alkyloxy; and

m is 0.

51. (Previously Presented): A compound according to claim 50, wherein Z is oxo-cyclohexyl, hydroxy-cyclohexyl, hydroxyimino-cyclohexyl, methoxyimino-cyclohexyl, methoxy-cyclohexyl, carboxy-cyclohexyl, or hydroxy-methyl-cyclohexyl.

52. (Currently Amended): A compound according to claim 50, wherein Y is phenyl, phenyl substituted by F, phenyl substituted by Cl, phenyl substituted by methoxy, phenyl substituted by cyano, phenyl disubstituted by F, phenyl monosubstituted by acetyl, or phenyl disubstituted by acetyl.

53. (Previously Presented): A compound according to claim 50, wherein X is methyl-cyclohexyl or fluoro-methyl-cyclohexyl.

54. (Currently Amended): A compound according to claim 51, wherein Y is phenyl, phenyl substituted by F, phenyl substituted by Cl, phenyl substituted by methoxy, phenyl substituted by cyano, phenyl disubstituted by F, phenyl monosubstituted by acetyl, or phenyl disubstituted by acetyl.

55. (Previously Presented): A compound according to claim 51, wherein X is methyl-cyclohexyl or fluoro-methyl-cyclohexyl.

56. (Previously Presented): A compound according to claim 54, wherein X is methyl-cyclohexyl or fluoro-methyl-cyclohexyl.

57. (Previously Presented): A compound according to claim 56, wherein Z is hydroxy-cyclohexyl, hydroxyimino-cyclohexyl, methoxyimino-cyclohexyl, methoxy-cyclohexyl, carboxy-cyclohexyl, or hydroxy-methyl-cyclohexyl.

58. (Previously Presented): A compound according to claim 52, wherein Y is

phenyl, 4-fluoro-phenyl, 3-fluoro-phenyl, 4-chloro-phenyl, 4-methoxy-phenyl, 4-cyano-phenyl, 3,4-difluoro-phenyl, or 4-acetyl-phenyl.

59. (Previously Presented): A compound according to claim 53, wherein X is 4-methyl-cyclohexyl or 1-fluoro-4-methyl-cyclohexyl.

60. (Currently Amended): A compound according to claim 50, wherein said compound is selected from:

3-[(4-METHYL-CYCLOHEXANECARBONYL)-(4-OXO-CYCLOHEXYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;

3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;

3-[(4-HYDROXYIMINO-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;

3-[(4-METHOXYIMINO-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;

3-[(4-METHOXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;

~~3-[(4-HYDROXY-CYCLOHEXANECARBONYL)-(4-METHYL-CYCLOHEXYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;~~

5-(4-FLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;

5-(3-FLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;

5-(4-CHLORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;

3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-(4-METHOXY-PHENYL)-THIOPHENE-2-CARBOXYLIC ACID;

5-(4-CYANO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-

CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;
~~5-(4-FLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-~~
~~CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;~~
 3-[(4-CARBOXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-
 AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;
~~3-[(4-CARBOXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-~~
~~AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;~~
 5-(3,4-DIFLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-
 CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;
 5-(4-ACETYL-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-
 CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID;
 3-[(4-HYDROXY-4-METHYL-CYCLOHEXYL)-(4-METHYL-
 CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC
 ACID;
~~3-[(3-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-~~
~~AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID;~~
 3-[(4-HYDROXY-4-METHYL-CYCLOHEXYL)-(4-METHYL-
 CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC
 ACID;
 3-[(3-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-
 AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID; and

pharmaceutically acceptable salts thereof.

61. (Currently Amended): A method for treating ~~or preventing~~ a Flaviviridae viral infection in a host comprising administering to the host a therapeutically effective amount of at least one compound according to claim 57.

62. (Previously Presented): A method according to claim 61, further comprising administering at least one additional agent chosen from viral serine protease inhibitor, viral polymerase inhibitor, viral helicase inhibitor, immunomodulating agent, antioxidant agent, antibacterial agent, therapeutic vaccine, hepatoprotectant agent or antisense agent.

63. (Previously Presented): A method according to claim 61, further comprising administering at least one additional agent chosen from interferon α , ribavirin, silybum marianum, interleukine-12, amantadine, ribozyme, thymosin, N-acetyl cysteine or cyclosporin.

64. (Previously Presented): A method for inhibiting or reducing the activity of a flaviviridae viral polymerase in a host comprising administering to said host a therapeutically effective amount of at least one compound according to claim 60.

65. (Previously Presented): A method as defined in Claim 64, wherein said polymerase is a RNA-dependant RNA-polymerase.

66. (Previously Presented): A method as defined in Claim 64, wherein said polymerase is HCV polymerase.

67. (Previously Presented): A pharmaceutical composition comprising at least one compound according to claim 60 and at least one pharmaceutically acceptable carrier or excipient.

68. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-METHYL-CYCLOHEXANECARBONYL)-(4-OXO-CYCLOHEXYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

69. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-

CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

70. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-HYDROXYIMINO-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

71. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-METHOXYIMINO-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

72. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-METHOXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

73. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-HYDROXY-CYCLOHEXANECARBONYL)-(4-METHYL-CYCLOHEXYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

74. (Previously Presented): A compound according to claim 60, wherein said compound is 5-(4-FLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

75. (Previously Presented): A compound according to claim 60, wherein said

compound is 5-(3-FLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

76. (Previously Presented): A compound according to claim 60, wherein said compound is 5-(4-CHLORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

77. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-(4-METHOXY-PHENYL)-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

78. (Previously Presented): A compound according to claim 60, wherein said compound is 5-(4-CYANO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

79. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-CARBOXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

80. (Previously Presented): A compound according to claim 60, wherein said compound is 5-(3,4-DIFLUORO-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

81. (Previously Presented): A compound according to claim 60, wherein said compound is 5-(4-ACETYL-PHENYL)-3-[(4-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

82. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(4-HYDROXY-4-METHYL-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

83. (Previously Presented): A compound according to claim 60, wherein said compound is 3-[(3-HYDROXY-CYCLOHEXYL)-(4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

84. (Previously Presented): A compound according to claim 60, wherein said compound has a monosubstituted-cyclohexyl group attached to the amino and the monosubstituent group of the cyclohexyl group attached to the amino is in the trans position relative to the amino.

85. (Previously Presented): A compound according to claim 84, wherein said compound has a 3-substituted-cyclohexyl group or 4-substituted-cyclohexyl group attached to the amino.

86. (Currently Amended): A compound according to claim ~~85~~ 84, wherein said compound has a 4-hydroxy-cyclohexyl group attached to the amino.

87. (Previously Presented): A compound according to claim 60, wherein said compound has a monosubstituted-cyclohexyl group attached to the amino and the mono-

substituent group of the cyclohexyl group attached to the amino is in the cis position relative to the amino.

88. (Previously Presented): A compound according to claim 87, wherein said compound has a 3-substituted-cyclohexyl group or 4-substituted-cyclohexyl group attached to the amino.

89. (Currently Amended): A compound according to claim ~~88~~ 87, wherein said compound has a 4-hydroxy-cyclohexyl group attached to the amino.

90. (Previously Presented): A compound according to claim 84, wherein said compound has a monosubstituted-cyclohexyl group attached to the carbonyl and the monosubstituent of the cyclohexyl group attached to the carbonyl is in the trans position relative to the carbonyl.

91. (Previously Presented): A compound according to claim 85, wherein said compound has a monosubstituted-cyclohexyl group attached to the carbonyl and the monosubstituent of the cyclohexyl group attached to the carbonyl is in the trans position relative to the carbonyl.

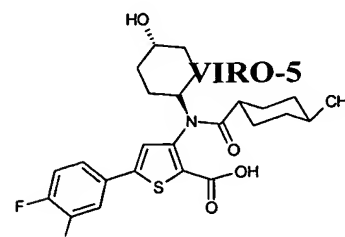
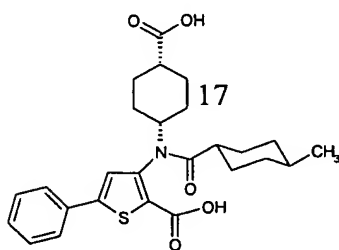
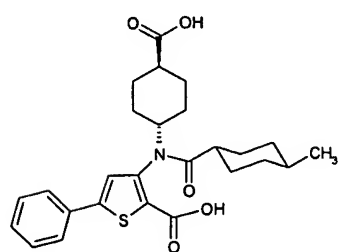
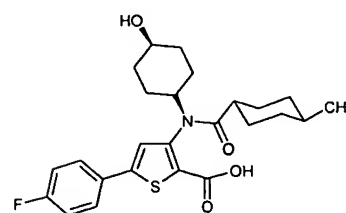
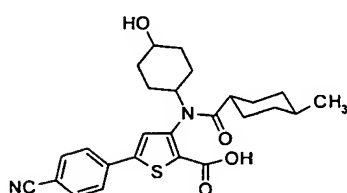
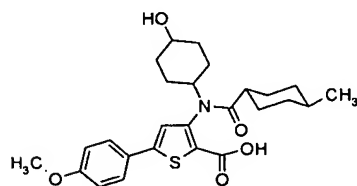
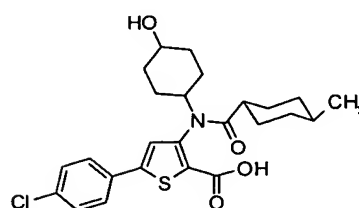
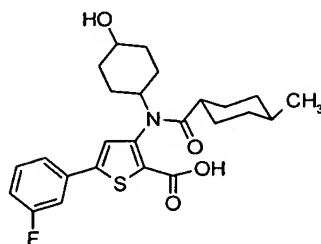
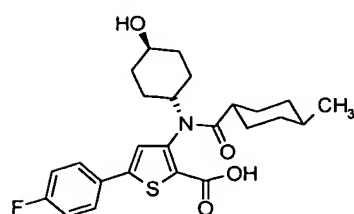
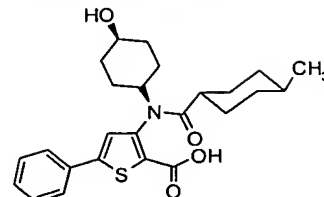
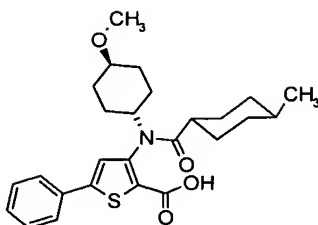
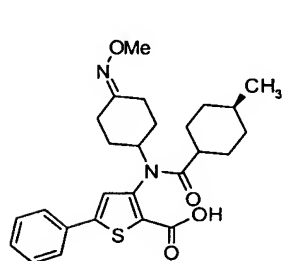
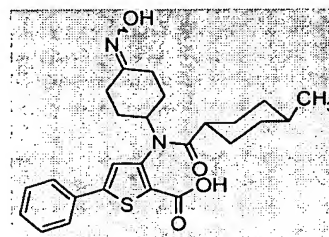
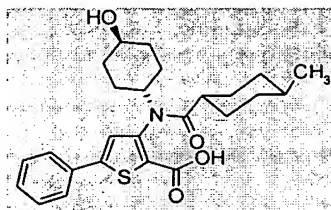
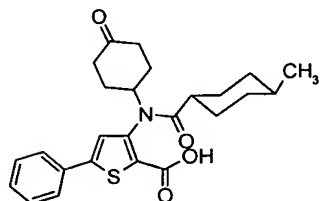
92. (Previously Presented): A compound according to claim 86, wherein said compound has a monosubstituted-cyclohexyl group attached to the carbonyl and the monosubstituent of the cyclohexyl group attached to the carbonyl is in the trans position relative to the carbonyl.

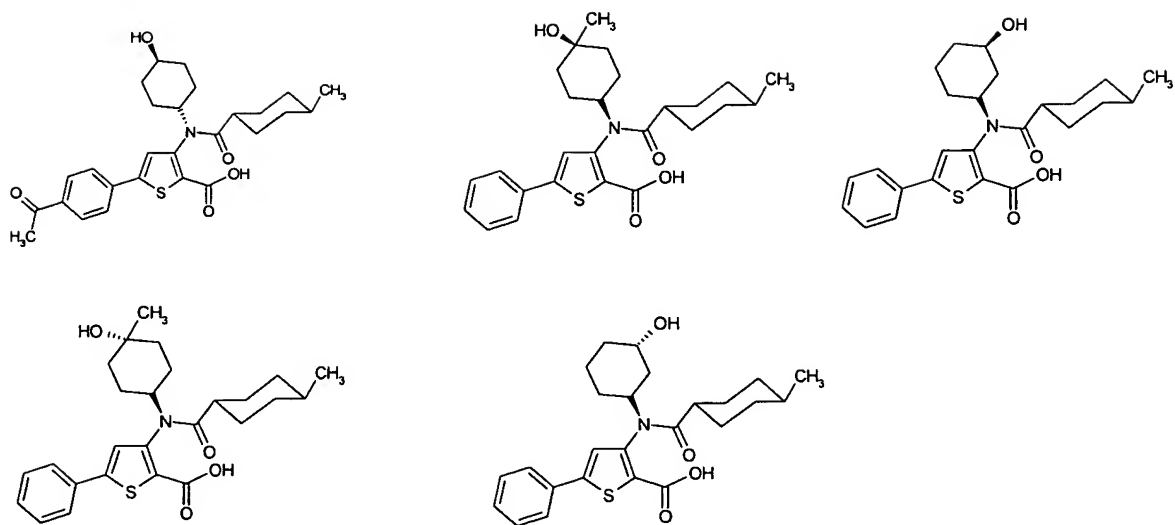
93. (Previously Presented): A compound according to claim 90, wherein said compound has a 4-hydroxy-cyclohexyl group attached to the carbonyl.

94. (Previously Presented): A compound according to claim 91, wherein said compound has a 4-hydroxy-cyclohexyl group attached to the carbonyl.

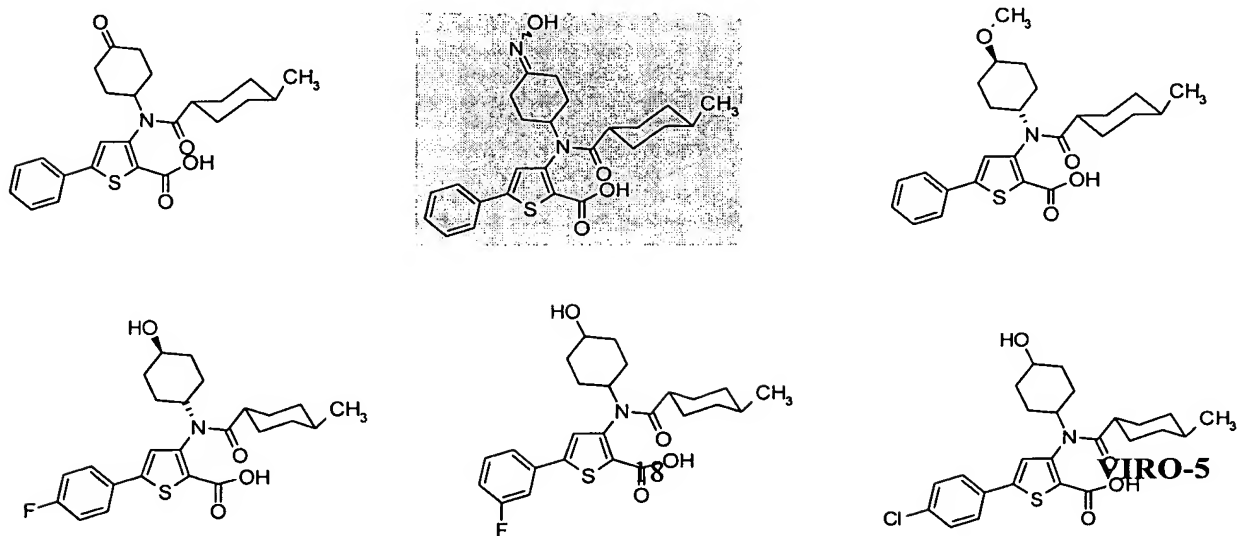
95. (Previously Presented): A compound according to claim 92, wherein said compound has a 4-hydroxy-cyclohexyl group attached to the carbonyl.

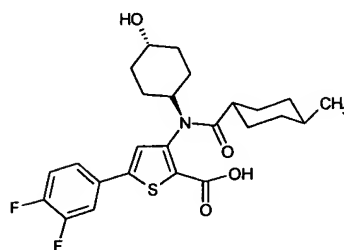
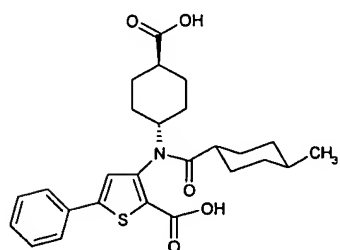
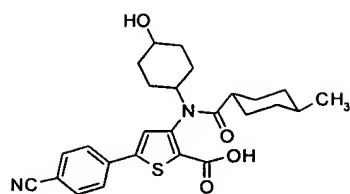
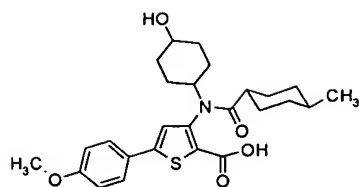
96. (Currently Amended): A compound according to claim ~~85~~ 86, wherein said compound is selected from compounds of the following formulas and pharmaceutically acceptable salts thereof:





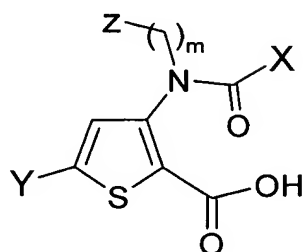
97. (Previously Presented): A compound according to claim 96, wherein said compound is selected from compounds of the following formulas and pharmaceutically acceptable salts thereof:





98. (Cancelled):

99. (Currently Amended): A compound of the formula:



or a pharmaceutically acceptable salt thereof;

wherein;

Z is ethyl-piperidinyl, isopropyl-piperidinyl, methyl-oxo-piperidinyl, acetyl-piperidinyl, formyl-piperidinyl, cyano-piperidinyl, methanesulfonyl-piperidinyl, aminooxalyl-

piperidinyl, methylcarbamoyl-piperidinyl, benzyl-piperidinyl, methoxybenzyl-oxo-piperidinyl, azepanyl, methyl-azepanyl, oxo-azepanyl, hydroxy-cyclopentyl, hydroxy-cyclohexyl, methoxy-cyclohexyl, carboxy-cyclohexyl, hydroxy-methyl-cyclohexyl, oxo-cyclohexyl, hydroxyimino-cyclohexyl, methoxyimino-cyclohexyl, tetrahydrothiopyranyl, 1-oxo-tetrahydrothiopyranyl ~~1-tetrahydrothiopyranyl~~, or 1,1-dioxo-tetrahydrothiopyranyl;

~~Rf, Rg and Rh in each case are independently H or C₁₋₆ alkyl;~~

Y is unsubstituted phenyl;

X is 4-methylcyclohexyl; and

m is 0-1.

100. (Previously Presented): A compound according to claim 99, wherein said compound is selected from:

4-[(2-Carboxy-5-phenyl-thiophen-3-yl)-(trans-4-methyl-cyclohexanecarbonyl)-amino]-1-methyl-piperidinium,

3-[(trans-4-Methyl-cyclohexanecarbonyl)-(tetrahydro-thiopyran-4-yl)-amino]-5-phenyl-thiophene-2-carboxylic acid,

3-[(1,1-Dioxo-tetrahydro-thiopyran-4-yl)-(trans-4-methyl-cyclohexanecarbonyl)-amino]-5-phenyl-thiophene-2-carboxylic acid,

3-[(trans-4-Methyl-cyclohexanecarbonyl)-(1-oxo-tetrahydro-1 lambda*4*-thiopyran-4-yl)-amino]-5-phenyl-thiophene-2-carboxylic acid, and

pharmaceutically acceptable salts thereof.

101. (Previously Presented): A compound according to claim 99, wherein Z is isopropyl-piperidinyl, methyl-oxo-piperidinyl, acetyl-piperidinyl, formyl-piperidinyl, cyano-piperidinyl, methanesulfonyl-piperidinyl, aminooxalyl-piperidinyl, methylcarbamoyl-piperidinyl, benzyl-piperidinyl, methoxybenzyl-oxo-piperidinyl, azepanyl, methyl-azepanyl, oxo-azepanyl, hydroxy-cyclopentyl, hydroxy-cyclohexyl, methoxy-cyclohexyl, carboxy-cyclohexyl, hydroxy-methyl-cyclohexyl, oxo-cyclohexyl, hydroxyimino-cyclohexyl,

methoxyimino-cyclohexyl, tetrahydrothiopyranyl, 1-oxo-tetrahydrothiopyranyl, or 1,1-dioxo-tetrahydrothiopyranyl.

102. (New): A compound according to claim 69, wherein said compound is 3-[(*trans*-4-HYDROXY-CYCLOHEXYL)-(*trans* -4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.

103. (New): A compound according to claim 69, wherein said compound is 3-[(*trans*-4-HYDROXY-CYCLOHEXYL)-(*cis* -4-METHYL-CYCLOHEXANECARBONYL)-AMINO]-5-PHENYL-THIOPHENE-2-CARBOXYLIC ACID, or a pharmaceutically acceptable salt thereof.